

AMENDMENTS TO THE CLAIMS:

1. (Currently amended) A lithium battery comprising:

a power-generating element comprising a positive electrode, a negative electrode and a separator, each of which comprises ~~at least a part of said power-generating element comprising a~~ gel electrolyte comprising:

a polymer comprising a polymerized polyfunctional (meth) acrylate monomer;
~~said gel electrolyte comprising said polymerized polyfunctional (meth) acrylate monomer in a~~
~~range from 5% to 30% by weight; and~~

a liquid electrolyte, a concentration of lithium salt in said liquid electrolyte being
in a range from 2 to 4 mols per liter of the liquid electrolyte, said gel electrolyte comprising said
polymerized polyfunctional (meth) acrylate monomer in a range from 5% to 30% by weight,
based on a total weight of said polymer and said liquid electrolyte.

wherein said gel electrolyte in said separator is different than said gel electrolyte in said
positive and negative electrodes.

2. (Currently amended) The lithium battery claimed in claim 1, wherein said gel electrolyte
comprises said polymerized polyfunctional (meth) acrylate monomer in a range from 10% to
25% by weight, based on a total weight of said polymer and said liquid electrolyte.

3. (Previously presented) The lithium battery claimed in claim 1, wherein said
polyfunctional (meth) acrylate monomer comprises one of a bifunctional (meth) acrylate, a
trifunctional (meth) acrylate, and a tetrafunctional (meth) acrylate.

4. (Original) The lithium battery claimed in claim 1, wherein said lithium salt comprises
LiBF₄.

5. (Previously presented) The lithium battery claimed in claim 1, wherein said liquid

electrolyte comprises an organic solvent comprising γ -butyrolactone in an amount of not smaller than 50% by weight.

6. (Previously presented) The lithium battery claimed in claim 2, wherein said polyfunctional (meth) acrylate monomer comprises a bifunctional (meth) acrylate monomer.
7. (Original) The lithium battery claimed in claim 2, wherein said lithium salt comprises LiBF_4 .
8. (Original) The lithium battery claimed in claim 3, wherein said lithium salt comprises LiBF_4 .
9. (Previously presented) The lithium battery claimed in claim 2, wherein said liquid electrolyte comprises an organic solvent comprising γ -butyrolactone in an amount of not smaller than 50% by weight.
10. (Previously presented) The lithium battery claimed in claim 3, wherein said liquid electrolyte comprises an organic solvent comprising γ -butyrolactone in an amount of not smaller than 50% by weight.
11. (Previously presented) The lithium battery claimed in claim 4, wherein said liquid electrolyte comprises an organic solvent comprising γ -butyrolactone in an amount of not smaller than 50% by weight.
12. (Previously presented) The lithium battery claimed in claim 1, wherein said liquid electrolyte comprises from 2 to 3 mols per liter of said lithium salt.
13. (Previously presented) The lithium battery claimed in claim 1, wherein said liquid

electrolyte comprises a plurality of lithium salts.

14. (Previously presented) The lithium battery claimed in claim 1, wherein said liquid electrolyte comprises an organic solvent comprising at least one of γ -butyrolactone, propylene carbonate and ethylene carbonate.

15. (Previously presented) The lithium battery claimed in claim 1, wherein said lithium salt comprises an inorganic anion comprising at least one of PF_6^- , ClO_4^- , AsF_6^- , and SCN^- .

16. (Previously presented) The lithium battery claimed in claim 1, wherein said lithium salt comprises an organic anion.

17. (Previously presented) The lithium battery claimed in claim 3, wherein said polyfunctional (meth) acrylate monomer comprises a bifunctional (meth) acrylate.

18. (Previously presented) The lithium battery claimed in claim 1, wherein said polyfunctional (meth) acrylate monomer comprises a trifunctional (meth) acrylate monomer.

19. (Currently amended) A lithium battery comprising:
positive and negative electrodes; and
a separator formed between said positive and negative electrodes,
wherein ~~at least one of~~ said positive electrode, said negative electrode and said separator
each comprise ~~comprises~~ a gel electrolyte comprising:

a polymer comprising a polymerized polyfunctional (meth) acrylate monomer;
~~said gel electrolyte comprising said polymerized polyfunctional (meth) acrylate monomer in a~~
~~range from 5% to 30% by weight; and~~

a liquid electrolyte comprising from 2 to 4 mols per liter of said lithium salt, said
gel electrolyte comprising said polymerized polyfunctional (meth) acrylate monomer in a range

from 5% to 30% by weight, based on a total weight of said polymer and said liquid electrolyte,
wherein said gel electrolyte in said separator is different than said gel electrolyte in said
positive and negative electrodes.

20. (Currently amended) A method of fabricating a lithium battery, said method comprising:

forming positive and negative electrodes; and

forming a separator between said positive and negative electrodes,

wherein ~~at least one of~~ said positive electrode, said negative electrode and said separator

each comprise ~~comprises~~ a gel electrolyte comprising:

a polymer comprising a polymerized polyfunctional (meth) acrylate monomer;

~~said gel electrolyte comprising said polymerized polyfunctional (meth) acrylate monomer in a~~
~~range from 5% to 30% by weight; and~~

a liquid electrolyte comprising from 2 to 4 mols per liter of said lithium salt, said
gel electrolyte comprising said polymerized polyfunctional (meth) acrylate monomer in a range
from 5% to 30% by weight, based on a total weight of said polymer and said liquid electrolyte,
and

wherein said gel electrolyte in said separator is different than said gel electrolyte in said
positive and negative electrodes.

21. (New) The lithium battery claimed in claim 1, wherein said gel electrolyte in said positive and negative electrodes comprises a polymerized polyfunctional (meth) acrylate monomer which is different than said polymerized polyfunctional (meth) acrylate monomer in said gel electrolyte in said separator.

22. (New) The lithium battery claimed in claim 21, wherein an amount of said polymerized polyfunctional (meth) acrylate monomer in said gel electrolyte of said positive and negative electrodes is different than an amount of said polymerized polyfunctional (meth)

acrylate monomer in said gel electrolyte of said separator.

23. (New) The lithium battery claimed in claim 22, wherein said positive electrode comprises a positive electrode active material sheet comprising a pressed laminate, and

wherein said pressed laminate of said positive electrode is vacuum impregnated with an electrolyte solution comprising a polyfunctional (meth) acrylate monomer which is polymerized to form said polymerized polyfunctional (meth) acrylate monomer of said positive electrode.

24. (New) The lithium battery claimed in claim 23, wherein said pressed laminate in said positive electrode active material sheet comprises a positive electrode current collector press laminated with a positive composite material.

25. (New) The lithium battery claimed in claim 24, wherein said positive composite material comprises one of LiCoO_2 , LiNiO_2 , LiMn_2O_4 , lithium titanium oxide, a vanadium oxide-based material and an iron phosphate-based material.

26. (New) The lithium battery claimed in claim 25, wherein said negative electrode comprises a negative electrode active material sheet comprising a pressed laminate, and
wherein said pressed laminate of said negative electrode is vacuum impregnated with said electrolyte solution comprising said polyfunctional (meth) acrylate monomer which is polymerized to form said polymerized polyfunctional (meth) acrylate monomer of said negative electrode.

27. (New) The lithium battery claimed in claim 26, wherein said pressed laminate in said negative electrode active material sheet comprises a negative electrode current collector press laminated with a negative composite material.

28. (New) The lithium battery claimed in claim 27, wherein said negative composite

Serial No. 10/018,020

7

Docket No. Y31-138999C/KK

material comprises one of lithium metal, lithium alloy and a carbon-based compound.

29. (New) The lithium battery claimed in claim 28, further comprising:
an aluminum laminate film covering said power-generating element and being heat-fused
to formed said lithium battery.